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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/075,376 | 02/15/2002 | Takeshi Masaki | P21996 | 7222 |
| 7055 | 7590 | 12/23/2003 | EXAMINER | |
| GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191 | | | | |
| | | | ART UNIT | PAPER NUMBER |

1725

DATE MAILED: 12/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,376

Applicant(s)

MASAKI ET AL.

Examiner

Geoffrey S Evans

Art Unit

1725

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 October 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,4,7 and 8 is/are rejected.
- 7) ☒ Claim(s) 2,3,5 and 6 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue in Japan Patent No. 61-197,125 in view of Muro et al. in U.S. Patent No. 5,676,860. Inoue discloses a method of electric discharge machining by changing the relative distance between the electrode and the workpiece at a predetermined frequency and amplitude by vibrating wire electrode (element 1), controlling the discharge pulse output in synchronization with changes in the relative distance between the electrode and the workpiece. Muro et al. teaches in column 5, lines 17-20 "... the electric discharge is produced when the gap is decreased, and the insulated state is

maintained when the gap is enlarged." Since the electric current will flow along the path of least resistance and when the gap between the electrode and the workpiece is minimized the least resistance is present in the gap, it would have been obvious to one of ordinary skill in the art to adapt Inoue in view of the teachings of Muro et al. to provide the power to the wire electrode so that the discharge occurs when the gap distance is least so that the power required by the power supply to initiate the gap is minimized.

4. Claims 1, 4, 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bourreau in view of Muro et al. in U.S. Patent No. 5,676,860. Bourreau in France Patent No. 2,518,442 discloses vibrating the electrode (element 26) in synchronization with the machining current and using a circuit (mains, tapped primary of a transformer) that generates pulsed electric discharges between the tool and electrode. Bourreau does disclose a second device that positions the tool electrode in a Z-direction orthogonal to the XY plane, and a vibration member that changes a relative distance between the tool electrode and the workpiece at a predetermined frequency and with a predetermined amplitude. Bourreau does not disclose a first device for positioning the workpiece in an XY plane, nor does Bourreau disclose a controller that controls a discharge pulse such that the discharge pulse is output when the relative distance between the tool electrode and the workpiece becomes sufficiently small that discharge is performed. Muro et al. teaches a device that positions the workpiece in the XY plane in figure 6 (element 16) and in column 5, lines 17-20 "... the electric discharge is produced when the gap is decreased, and the insulated state is maintained when the gap is enlarged." It would have been obvious to adapt Bourreau in view of Muro et al.

to provide this to properly position the workpiece and to provide the power to the wire electrode so that the discharge occurs when the gap distance is least so that the power required by the power supply to initiate the gap is minimized.

5. The word "micro" in the preambles of the claims has not been given patentable weight because it is not present in the main body of the claims and is not necessary to breathe life into the claim language in the main body of the claims.

6. Claims 2,3,5, and 6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP


§ 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey S Evans whose telephone number is (571)-272-1174. The examiner can normally be reached on Mon-Fri 6:30AM to 4:00 PM, alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on (703)-308-3318. The fax phone number for the organization where this application or proceeding is assigned is (703)-305-7718.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)-308-0661.


Geoffrey S Evans
Primary Examiner
Art Unit 1725

GSE